Comparison between hydraulic injector HDJ-M3 and pneumatic injector PNJ-T2

It enables micromanipulation without stress to understand the characteristic of the injector.

Model	Hydraulic injector HDJ-M3	Pneumatic injector PNJ-T2
		
Preparation	Liquid filling is necessary The air bubbles removal is necessary before pipette insertion. Pipette insertion cannot be redone.	Simple and easy Pipette insertion can be redone again and again.
Stability	The quality of setting greatly influences stability.	Because setting is simple, it is easy to get stability.
Pressure	High pressure The volume of the filling in the cylinder hardly influences applied pressure.	It is lower than a hydraulic injector. The volume of the air in the cylinder influences applied pressure. Large volume --- Low pressure Small volume --- High pressure
Responsiveness	High response	Moderate response
Maintenance	When filling liquid deteriorates, re-filling is necessary. It is easy to find the deterioration of the part of the injector and a damage point by a leak.	Almost maintenance-free The identification of the malfunction point is slightly difficult.
Operating environment	When filling liquid begins to leak, it may cause the contamination.	There is no negative effect to give on micromanipulation environment.
Suitable micromanipulation	Manipulation to inject efficiently in succession. The microinjection that high pressure needs. For example… Somatic cell nuclear transfer Stem cell injection ICSI (laboratory animal)	Manipulation to attach great importance to certainty and safety. The manipulation that it is necessary to delicately control pressure. For example… ICSI (Assisted reproductive technology) RNA injection

The quality of condition of the injector has an influence on the operability of the Piezo micromanipulator. When you feel sense of incongruity to your injector even a little, please maintain it without question.

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